

## REMARKS/ARGUMENTS

### STATUS OF THE CLAIMS

Claims 1-42 and 44-61 are pending with entry of this amendment, claim 43 being cancelled and claims 60-61 being added herein. Claims 1-25 and 49-59 have been withdrawn. Claims 26, 30, 33, 44, and 45 are amended herein. These amendments introduce no new matter and support is replete throughout the specification. These amendments are made without prejudice to renewal of the claims in their original form and are not to be construed as abandonment or dedication of the previously claimed subject matter or agreement with any objection or rejection of record.

With respect to claim 26, which has been amended to more clearly claim the desired invention, support for the amendments can be found throughout the specification. For example, see specification at paragraphs 0016, 0019, 0054-0059, 0070, and 0073-0078 with respect to different subsets of nanocrystals and at paragraphs 0034, 0061, and 0133-0135 with respect to linkage of the nanocrystals to the adherent matrix. Claim 33 has been amended to more clearly claim the desired invention by specifying that the nanocrystals include a coating layer comprising the indicated material; support for the amendments can be found, e.g., at paragraph 0050. Claims 30 and 44-45 were amended to correct typographical errors. Support for new claim 60 can be found in the specification, for example, at paragraphs 0034 and 0133-0135. Support for new claim 61 can be found, for example, at paragraphs 0032, 0041, and 0081.

With respect to the amendments to the specification, which merely correct an obvious error, support can be found throughout the specification as originally filed. For example, see the specification at paragraphs 0067 and 0087.

Applicants submit that no new matter has been added to the application by way of the above amendments. Accordingly, entry of the Amendment is respectfully requested.

The action of December 19, 2006 included rejections for alleged lack of enablement and alleged obviousness. Applicants traverse all rejections and objections, to the extent that they may be applied to the amended claims, for the reasons noted herein.

#### THE INFORMATION DISCLOSURE STATEMENT

Applicants note with appreciation the Examiner's thorough consideration of the references cited in the Information Disclosure Statement (Form 1449) submitted on April 16, 2004.

It was indicated that reference DT in the April 16, 2004 IDS was not provided. This reference is being resubmitted on the attached 1449, and a copy is provided.

Applicants note that reference BH, US 6,602,671, is, as indicated on the previously submitted IDS, to Bawendi et al. on August 5, 2003 (and is entitled "Semiconductor nanocrystals for inventory control"). This reference is not to McNamer et al. as indicated by the Examiner. This reference is being resubmitted on the attached 1449.

Applicants request that the Examiner indicate consideration of the citations by initialing the 1449 document and providing a copy to Applicants.

#### THE CLAIMS ARE ENABLED

Claim 33 was rejected under 35 USC §112, first paragraph, for alleged lack of enablement. To the extent that the rejections are applied to the amended claim, Applicants respectfully traverse.

The Action alleges that the invention fails to meet the enablement standard articulated by In Re Wands 8USPQ2nd 1400 (Fed Cir 1988), namely in that undue experimentation would be required to make a CdSe nanocrystal with a non-visible spectrum. The Action alleges that the prior art does not show nonvisible spectra using CdSe, citing Bruchez et al. U.S. patent 6,274,323 as stating that "semiconductor nanocrystals that emit energy in the visible range include...CdSe." Applicants note that Bruchez merely states CdSe nanocrystals can produce visible spectra; it does not state that CdSe-containing nanocrystals do not

produce nonvisible spectra. The Action has therefore not established that CdSe nanocrystals with nonvisible spectra are not shown in the art.

However, claim 33 has been amended as noted above to specify that the nanocrystals are coated nanocrystals including a coating layer that comprises a material selected from those listed (e.g., CdSe). Coated nanocrystals including a CdSe coating layer and emitting in the nonvisible range were known in the art at the time the instant application was filed. See, for example, Bruchez, which states at column 18 lines 33-36 that "For a semiconductor nanocrystal core that emits in the near IR, materials having a bandgap energy in the visible, such as CdS or CdSe, may also be used [for the overcoating material]."

Applicants respectfully request that the rejection be reconsidered and withdrawn.

#### THE CLAIMS ARE NOT OBVIOUS

Claims 26-29, 31-32, 34-37, 40, 43, and 46-48 were rejected for alleged obviousness under 35 USC 103(a) over Zaheer et al. in view of Bruchez et al. The above amendments to claim 26 render the rejections moot. However, to the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

Three requirements must be met for a *prima facie* case of obviousness. First, the prior art reference(s) must teach all of the limitations of the claims (M.P.E.P. § 2143.03). Second, there must be a motivation to modify the reference or combine the teachings to produce the claimed invention (M.P.E.P. § 2143.01). Third, a reasonable expectation of success is required (M.P.E.P. § 2143.02). The teaching or suggestion to combine and the expectation of success must be both found in the prior art and not based on Applicants' disclosure (M.P.E.P. § 2143).

The combination of Zaheer and Bruchez does not meet the requirements for a *prima facie* case of obviousness. First, the combination does not teach all the limitations of the claims. For example, neither Bruchez nor Zaheer (nor a combination thereof) teaches a population of nanocrystals that comprises two or more subsets of nanocrystals with different light emission or excitation characteristics, where the emission spectrum and at least a portion of the excitation spectrum are in the nonvisible range, disposed in or linked to an adherent matrix as is specified in claim 26. Zaheer teaches only a single dye (rather than two

dyes as is alleged in the Action; compounds IRDye78 and Pam78 include the same dye). While Bruchez describes nanocrystals that emit in the nonvisible range, Bruchez fails to describe populations including two or more subsets of nanocrystals that do so. Although the Action alleges that “The use of multiple populations of nanocrystals is described in column 19 lines 23-26 of Bruchez et al.,” Applicants note that this section refers to preparation of separate populations of nanocrystals, not to subsets of nanocrystals within a single population. Bruchez also fails to describe such populations associated with an adherent matrix. Additional points of distinction are present in the dependent claims, but because independent claim 26 is not anticipated, it is not necessary to address each additional point.

The combination of Zaheer and Bruchez thus does not teach all the limitations of the claims. Furthermore, motivation to combine the teachings of the references is lacking. In addition, there is no reasonable expectation of success, since the suggested combination does not result in the present invention. Applicants respectfully request that the rejections be reconsidered and withdrawn.

Claims 26, 30, and 38-39 were rejected for alleged obviousness under 35 USC 103(a) over Zaheer et al. in view of Bruchez et al. further in view of Bruchez et al. (1998). To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

The combination of Zaheer, Bruchez, and Bruchez (1998) does not meet the requirements for a *prima facie* case of obviousness. For example, the combination does not teach all the limitations of the claims.

As described above, the combination of Zaheer and Bruchez fails to teach all the limitations of claim 26. For example, the combination of Zaheer and Bruchez fails to teach at least a population of nanocrystals comprising two or more subsets of nanocrystals with different emission or excitation characteristics that has its emission spectrum and at least part of its excitation spectrum in the nonvisible range and that is associated with an adherent matrix.

With respect to claim 30, merely adding a substituted silane from Bruchez (1998) thus does not result in the claimed invention; the combination still fails to teach a population of nanocrystals such as that specified in claim 26 associated with an adherent matrix.

With respect to claims 38-39, although the Action alleges that Bruchez (1998) teaches use of multiple excitation wavelengths, Applicants note that Bruchez (1998) fails to teach a single population of nanocrystals containing subsets of nanocrystals exhibiting different excitation wavelengths as is specified in the instant claims. Figure 1B of Bruchez (1998), for example, presents an excitation spectrum for a single nanocrystal type. The spectrum may have more than one peak, but it still represents a single type of nanocrystal, not a population including multiple subsets of nanocrystals with different excitation characteristics. Similarly, Figure 2 of Bruchez (1998) presents emission spectra for single nanocrystal types (as indicated in the Action, “each sigmoidal curve corresponds to a single spectrum”); it does not represent an emission spectrum for a population of nanocrystals containing multiple subsets.

The combination of Zaheer, Bruchez, and Bruchez (1998) thus does not teach all the limitations of the claims. Moreover, motivation to combine the teachings of the references is lacking. No suggestion to combine the teachings is found in the references. In addition, there is no reasonable expectation of success, since the suggested combination does not result in the present invention. Accordingly, Applicants respectfully request that the rejections be withdrawn.

Claims 26, 41-42, and 44-45 were rejected for alleged obviousness under 35 USC 103(a) over Zaheer et al. in view of Bruchez et al. further in view of Weiss et al. To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

Again, the combination of Zaheer, Bruchez, and Weiss does not meet the requirements for a *prima facie* case of obviousness. First, the combination does not teach all the limitations of the claims. As described above, the combination of Zaheer and Bruchez fails to teach all the limitations of claim 26. Merely adding varying the composition, size, or concentration of the nanocrystals from Weiss, for example, thus does not result in the claimed invention; the combination still fails to teach a population of nanocrystals such as that specified in claim 26 associated with an adherent matrix.

In addition, motivation to combine the teachings of the references is lacking, and there is no reasonable expectation of success since the suggested combination does not result in the present invention. Accordingly, Applicants respectfully request that the rejections be withdrawn.

## CONCLUSION

In view of the foregoing, Applicant(s) believe(s) all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the claims are deemed not to be in condition for allowance after consideration of this Response, a telephone interview with the Examiner is hereby requested. Please telephone the undersigned at (510) 337-7871 to schedule an interview.

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Respectfully submitted,



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### Attachments:

- 1) A petition to extend the period of response for **1** month;
- 2) A transmittal sheet;
- 3) A fee transmittal sheet;
- 4) A supplemental Information Disclosure Statement;
- 5) PTO-1449;
- 6) Cited References and,
- 7) A receipt indication postcard.